Analyzing Library Communities

Dashboards are popular, in part, due to the newer models with their plug-and-play design that make them easier to set up and run. A tool that allows users to see quickly what's happening across an entity, dashboards still require that staff recognize what's important, identify trends, develop actionable insights, and translate all of that into actions that will assist the organization in achieving its goals. This is as true for libraries analyzing their communities to plan for the future as it is for other organizations.

By Barbie E. Keiser

Gathering the data required to feed a dashboard—making sure they are the right datapoints, as well as being accurate—is only part of the challenge. Presenting the data so that those viewing the dashboard understand what's happening and the changes necessary to improve the performance is considerably more demanding.

Libraries collect and report numbers regarding resource and physical space usage. Why they collect this data can vary: out of habit, for publication in annual reports, as grant support documentation, for reporting to consortia, and in support of strategic planning efforts. Librarians often struggle to exploit that data in a meaningful way to guide them beyond making appropriate purchasing decisions for their community.

ACTIONS FROM DATA

Data from integrated library systems (ILS) can tell the library which titles have been circulating and which have not moved off the shelf. While a webpage or newsletter might list a few "new titles" added to the collection the previous month, do libraries inform individuals, based on prior reading selections, of an acquisition that they might like? Would that be too much trouble for the library or perhaps unsettling to individuals?

What about the people who ought to be using the library but don't? Do they know what the library has to offer and choose not to utilize its services, or is the location or hours of

operation inconvenient for them? These questions need answers if the library is to effectively market its collections, programs/events, and services.

Many libraries use surveys as a way to gain an understanding of how their patrons use the library, what they value, and what else they want/expect from it. However, survey data can be misleading if the questions are not formulated properly.

Librarians appreciate the wealth of external data that exists about the communities they serve, but they may be less familiar with how to use that data to the benefit of the library (and the community). What if the library were to become more data-driven? How would that change how librarians develop and market the services offered in each branch? How might those services be promoted differently across the community based on, for example, the social media they utilize most frequently?

In a post-pandemic world, it's unlikely that library budgets will allow for new staff with data science and data analytic skills. While libraries develop their existing staff's data skills, tools are being customized for use by libraries to help them better serve their communities. Just as one no longer needs to possess any great technical expertise to get a website up and running, nor employ a graphic designer to create engaging presentations, libraries can forego hiring data scientists or analysts. Gale (gale.com) may have found a way to commoditize

data science technology to help libraries accomplish what is needed today.

GALE RECOGNIZES A NEED (OR TWO)

In 2013, Gale, a division of Cengage Learning, embarked on a mission to explore how, as an educational publishing company, it could help public libraries beyond offering access to databases. Gale employees went on a listening tour, asking public librarians about the challenges they were facing. What they heard will surprise no one:

- Too much data, trapped in multiple siloes.
- Concern about respecting the privacy of patron records.
- The wealth of good external data about households in their communities, from census tract data, American Community Survey, and Google geographic data, was not easily integrated with data generated from library door counts, database usage, or materials circulation statistics.

The company launched Gale Engage (gale.com/databases/gale-engage), a cloud-based solution, to help libraries personalize outreach and increase engagement in their communities at the end of 2019. Developed in partnership with Deziner Software (dezinersoftware.com), Gale Engage facilitates internal library data analysis, audience segmentation, and

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targeted communications with messages designed to increase the frequency and range of types of engagement.

Librarians upload data files from their ILS to Gale Engage. Customized scripts take the raw data and visually display metrics in a dashboard that allows users to view trends and key performance indicators. Cardholders are categorized into groups based on their interests, allowing for more relevant communications. Gale Engage connects to most email marketing systems, and library social media account metrics can be tracked directly from the dashboard, smoothing the way for targeted outreach.
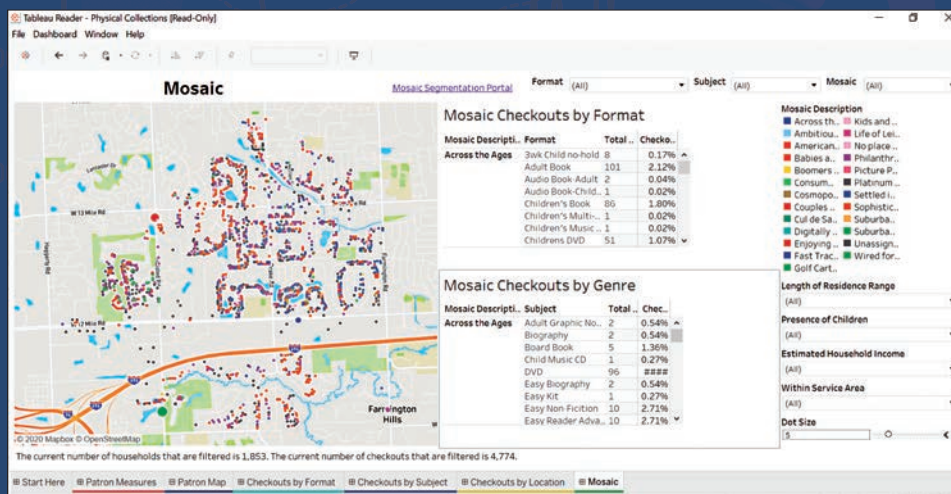
ENTER GALE ANALYTICS

Launched initially in 2014, with updates as recent as September 2020, Gale Analytics (gale.com/databases/gale-analytics) integrates external data about the communities in which public libraries operate into Gale Engage. Both help librarians determine what data to consider, facilitates the integra-

tion of data from multiple sources, provides the tools necessary to understand what existing data says about community needs, and identifies the audience and mechanisms to use when promoting each service/program. Gale Analytics allows public libraries to pair internal library usage data with demographic visualizations of their communities. The purpose? To better inform library planning, programming, collection development, and outreach efforts.

The sweet spot of the Gale Analytics suite is its ability to segment households within a community based on interest, income, the presence of children, and technology used, displayed in rich visuals and dynamic maps. This helps libraries dive into geographic areas so they can better target library messages and services. Plus, it eliminates the need for librarians to turn to multiple data sources to retrieve detailed data about their community, such as from the U.S. Census, other government agencies at the state and local levels, and non-governmental sources. Recognizing that the preparation of data can be intimidating,
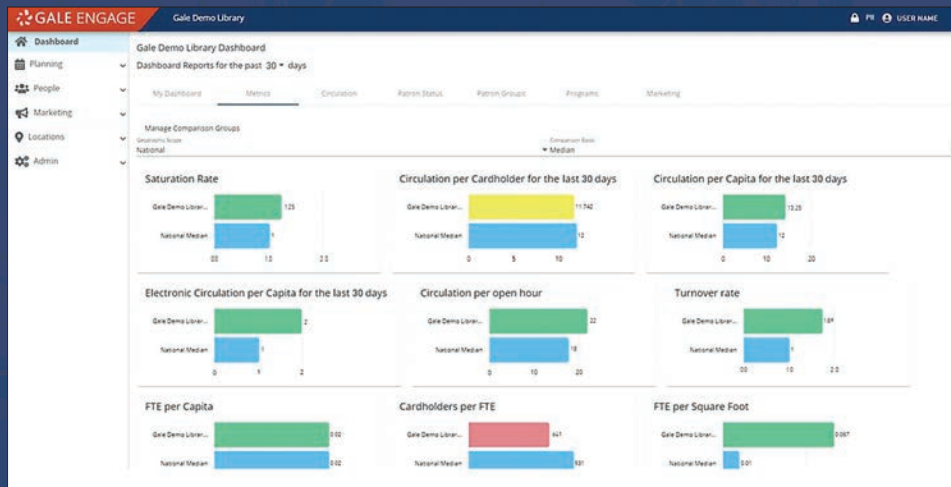
The Gale Engage Dashboard uses customized scripts to visually display metrics taken from the raw data in a library's ILS, which will show trends and key performance indicators.

The Gale Analytics Physical Collections dashboard allows libraries to review transactional history and combine it with segmentation and lifestyle data.

Mosaic Groups

Power Elite	Flourishing Families	Booming With Confidence	Suburban Style
Thriving Boomers	Promising Families	Young City Solos	Bourgeois Melting Pot
Family Union	Autumn Years	Significant Singles	Blue Sky Boomers
Families in Motion	Pastoral Pride	Singles and Starters	Cultural Connections
Golden Year Guardians	Aspirational Fusion	Thrifty Habits	

the company partnered with Alteryx (alteryx.com/why-alteryx/alteryx-for-good/non-profits) to provide a reusable workflow for self-service data preparation and statistical analysis.

Gale Analytics relies on the ability of Experian's Mosaic USA (experian.com/assets/marketing-services/product-sheets/mosaic-usa.pdf) to profile households using a range of demographic and lifestyle characteristics. Just as web designers use multiple personas as they consider how different segments of the population are likely to use a website, the 71 unique profiles (mosaics) help libraries segment patrons and non-patrons based on demographic and lifestyle characteristics.

The integration of Gale Analytics with Tableau Reader (tableau.com/products/reader), the free version of Tableau, helps libraries both see and understand what is occurring with collections usage. Librarians can then craft a viable outreach strategy for each segment of the target population. Gale's choice of dynamic maps to plot data means that users need not learn an unfamiliar (or costly) mapping tool to help them visualize the geographic region covered by their library. Depending on which dashboard is displayed, users toggle between five to eight tabbed views of the data, easily customized using drop-down menus and sliders designed to graphically display precisely the data required.

FIVE INTERACTIVE DASHBOARDS

The five dashboards in the Gale Analytics suite are designed to help librarians effortlessly merge the library's ILS data with externally sourced data about its community, viewing the community through the different lenses (mosaics) that segment households within a geographic region by a range of criteria that make each profile distinct from the next. While mosaic names are meant to be catchy, several are off-putting and less than intuitive, such as American Royalty, Fast Track Couples, and Full Steam Ahead.

Experian draws on a range of data factors to classify Americans and assign individual households to one of 71 unique types. Mosaics sharing common characteristics, motivations, and consumer preferences, are grouped into 19 segments (see the chart Mosaic Groups above.)

Experian's 700 datapoints plug into an algorithm that allows a library to understand a community's financial circumstances, digital life, buying styles, and degree of environmental consciousness. Icons indicate the likelihood of a segment to respond to marketing via a range of channels, including broadcast/streaming TV, direct mail, radio, mobile SMS, email, or social media preferences, which helps the library decide the best method to use to reach out to each grouping.

The use of this household-level data allows librarians to base decisions on more than what each person does in the library. Gale had the foresight of taking internal library data—anything with a patron address—joining it with the mosaic segmentation model of Experian, and processing it to present a unified dashboard (graphics plus dashboard) or PDF report.

The Patron Measures tab, which offers a snapshot of patrons that can easily be filtered by mosaic segment(s), by estimated household income, length of residence, or presence of children in the household, appears in all five dashboards. The Patron Map visualizes patron and non-patron households within a geographic region.

COLLECTIONS DASHBOARDS

The Physical Collections Dashboard allows the library to review transactional history taken from its ILS, then combine it with segmentation and lifestyle data in order to understand

Other Vendor Options

Gale is not the only vendor looking at opportunities to help libraries communicate with their patrons. EBSCO's subscription service Library Aware (libraryaware.com, @libraryaware) is a web-based outreach service featuring professionally designed templates for bibliographies, posters, signs, flyers, bookmarks, and website widgets. The service uses EBSCO NoveList NextReads newsletters (www.ebscohost.com/novelist/our-products/nextreads), which contains book descriptions written by librarians and school media specialists. There are 25 distinct NextReads newsletters, each one focused on a genre or topic, ready to deliver reading recommendations to your library patrons' inboxes with a custom header you design.
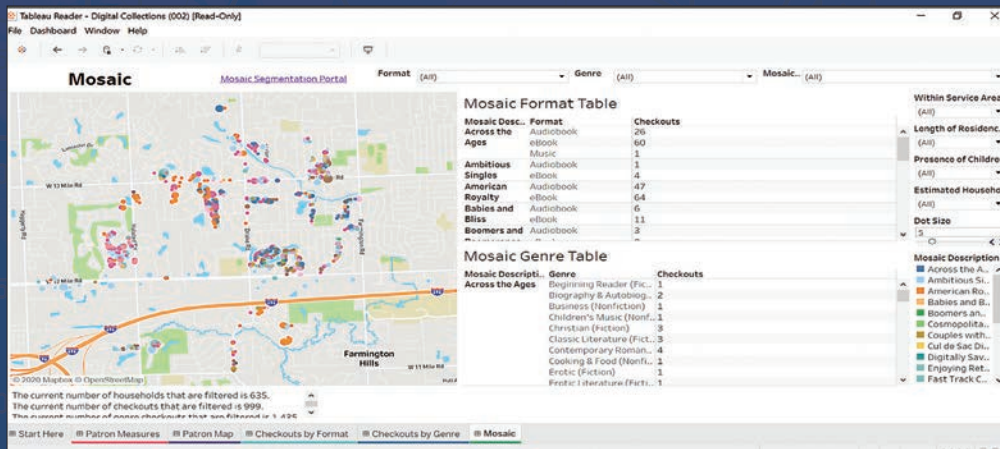
The Digital Collections dashboard with a map of checkouts by patron location and tables for circulation statistics segmented by format and genre
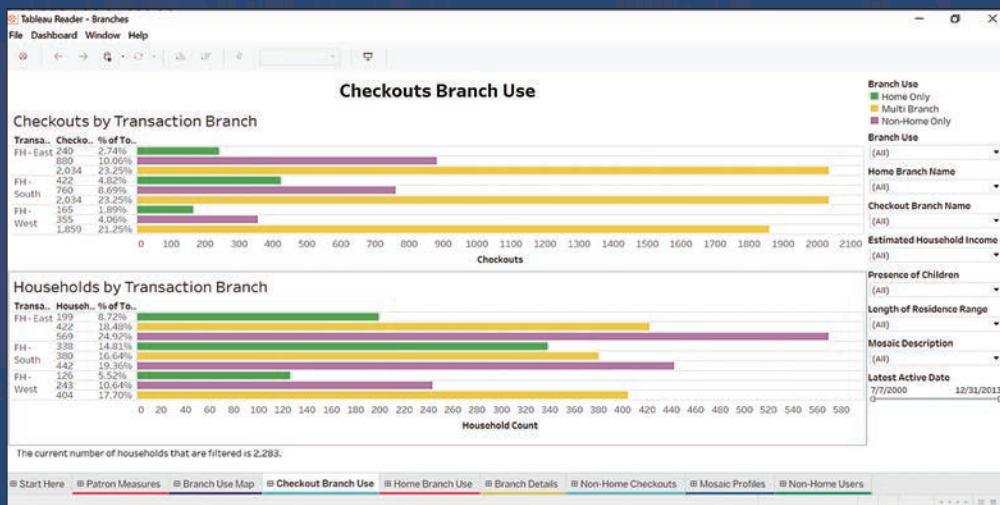
The Branch dashboard shows comparative usage data among branches of a library system.

what genre is being checked out by which household type, when, and how often.

Visual displays of Checkouts by Format and Subject allow the library to hone n on patron preferences. These can be filtered to display by the mosaic that has checked out the most items or reversed to rank the mosaic that has checked out the least. Checkouts by Location maps this data so libraries can see clusters of patrons and non-patrons around each branch. The Mosaic tab reveals mapped users and usage data, allowing librarians to see where different types of users, by mosaic profile, are clustered, which perhaps could be useful for future programming/events.

The Digital Collections Dashboard offers the same capabilities for segmenting the library's ebook and audiobook vendor data with the mosaic segmentation and lifestyle data. Analysis can begin from the collection side (genre) or community (household type), helping the library understand not only what is circulating, but who is checking out this material, when, where, and how often. All the tabs available for Physical Collections are present in this dashboard. Notice how the filtering

options on the Patron Measures tab change, as appropriate, with the dashboard.

BRANCHES AND INSIGHTS

The Branch Dashboard allows libraries to understand cardholder activity within their library system and compare the performance of one branch to another. Note the ability to filter usage by branch type to isolate patrons who are utilizing the branch closest to their home, those who make use of multiple branches, and those who consistently choose a branch other than the one located closest to their home.

The Community Insights Dashboard provides segmented information on a library's patron and non-patron data. Once a librarian enters up-to-date patron address information, this dashboard can reveal the patron's most recent activity date, the total number of items checked out by the patron, and an email address. Users can then (1) select a geographic option and (2) select a Tableau output option.

The Community Insights view is vital in order for libraries to understand and visualize library activity across time, seeing the changes that are occurring within a 15-year time span.
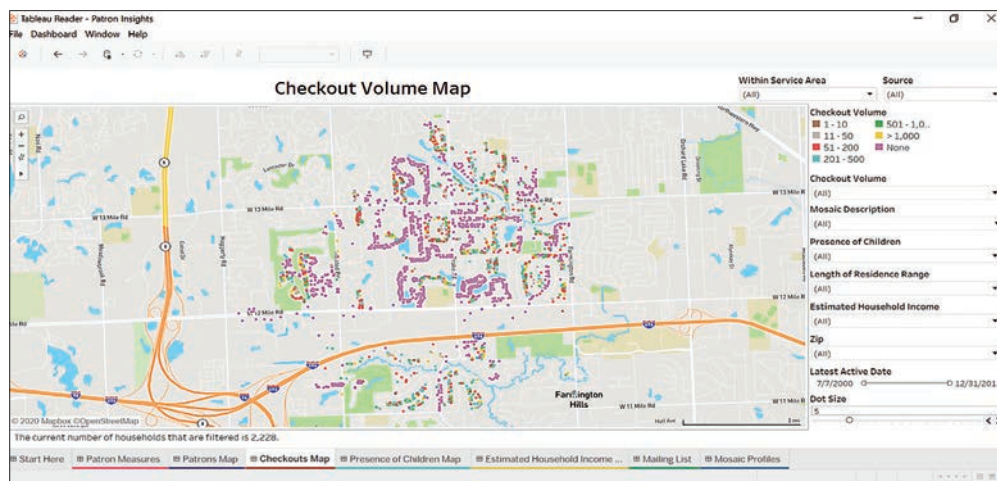
Patron Insights measures how each library is doing by mosaic breakdown.

The filters on the right permit librarians to ask why the library is not attracting patrons from the geographic area or a certain income level within the library's service area. Does the data support what you believed about your community, or tell you something different?

Patron Insights measures how each library is doing by mosaic breakdown. The Checkouts Map provides the library with a view of those who use the library the most (or least), filtered by mosaic description, presence of children, or estimated household income. One tab on the Patron Insights dashboard holds the emailing list, which can be filtered to send direct mail or email to specific users, based on the applied criteria. The Mosaic tab allows the library to understand the demographic segments it is reaching.

Addresses and circulation data are disassociated from customer names in a concerted effort to protect the privacy of individuals. All data is blended within a secure cloud environment, with the outputs returned to the library account rather than retained in the cloud.

DIVERSITY AND INCLUSION

While many vendors have issued statements about how they intend to respond to pervasive racial injustice in the United States in their hiring practices and promotions moving forward, Gale's commitment to supporting equity and inclusion is evident in recent enhancements made in Gale Analytics. Libraries can target those at the lower end of the scale and, by filtering on household income, be sensitive to the digital divide that may be a barrier to utilizing the full range of library services. To ensure each library is inclusive and serves the diverse needs of its community, Gale developed data overlays that give users a view into community data through Census-driven layers showing race/ethnicity, educational attainment, income, and checkout volume.

NOT JUST FOR PUBLIC LIBRARIES

Gale Analytics was designed for public library systems because the insights are derived by matching internal library data with external demographic data to structure a strategy to modify the library's collections, programming, events, and communications based on data. That data is drawn from demographic, company, and residential information by geographic location.

There's nothing unique about a public library's quest to understand its user community. Every library strives to make its collections and services relevant to the wants, needs, and interests of its community. Other types of libraries can use this approach, identifying the data that is available within its library systems and the organizations in which the data resides.

Consider the community college library, for example. Within the administration exists a considerable amount of demographic data about students and their families, the geographic regions in which these colleges are situated, and the high schools from which they draw incoming freshmen. The ILS circulation data that is available for a student could be matched with that student's courses of study, instructors, and library instruction to enable targeted suggestions for further reading. It would be great to be able to use some of the scripts and connectors Gale employs with Alteryx, Tableau, and Google Maps to create similar products for the community library. Hint, hint …

Having an understanding of what the data says does not guarantee that the library will know how to use that information to create engaging outreach efforts with their communities. How can libraries be sure that the messages they craft will resonate with the targeted users?

Envision an advanced form of Grammarly (grammarly.com). Instead of simply recommending changes to content, the system advises the librarian about why the recommended changes would be better given the target market and specified objectives. Now, consider uploading content to a system using AI to recommend what title/wording would work best to convey your message and engage users on each of the different social media platforms you've specified (e.g., Twitter, Facebook, Pinterest, Instagram). The tool might even suggest a better icon or image to accompany the message.

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